MINNESOTA DEPARTMENT OF AGRICULTURE
GROUNDWATER SURVEY

Pesticide contamination of groundwater has become a major concern since increased monitoring with improved analytical techniques have led to detection of pesticide residues in groundwater. To date only scattered attempts have been made to measure pesticide residues in groundwater in Minnesota. Usually, information generated has been the result of incidents or complaints and does not reflect normal agricultural use. The Minnesota Department of Agriculture has initiated a new program designed to survey sensitive groundwater for pesticide residues.

The MDA is conducting this survey in close cooperation with a Minnesota Department of Health (MDH) survey of community and non-community public water supplies. To optimize efficiency and minimize expense, these two agencies are cooperating with other state agencies, the University of Minnesota, and federal agencies in the planning, field and laboratory aspects. The advantage of two simultaneous surveys, with one focused on pesticide contamination near the water table (MDA) and the other at the source of drinking water (MDOH), is to provide perspective while obtaining relevant information regarding this problem.

A review of agricultural pesticides used in Minnesota resulted in an initial list of 45 high priority pesticides that pose a threat to groundwater. Pesticides were chosen after consideration of use, leachability, and toxicology. The MDA laboratory will develop the analytical capabilities for each of these priority pesticides, but individual sample analysis will be guided by pesticide use histories obtained through interviews with nearby growers.

The MDA survey will utilize established water table observation wells in or near fields with known pesticide use histories. Though a wide variety of agricultural conditions that will be included in the survey, areas sensitive to groundwater contamination, such as the karst area of the southeast and the irrigated, coarse-textured soils of central Minnesota, will be emphasized.

Well selection will be directed towards obtaining a distribution of prevalent agricultural conditions. Monitoring sites will be chosen with consideration given to pesticide use, soils, depth to water table, aquifers, climate and cropping patterns. Approximately eighty-five (85) wells will be sampled three times each year with respect to recharge conditions.

The first samples will be collected in the fall of 1985. Analysis will be conducted by the MDA pesticide residue laboratory in an effort to obtain a high degree of analytical confidence. Data generated will be reviewed by the MDA, MDH, and other State agencies, and made available to those concerned through a State planning agency's data management system.

Results of this survey will provide a basis for future monitoring and ultimately for direction in regulatory, enforcement, and management practices for agricultural pesticides used in Minnesota. The goal of this survey is to provide information that will aid in the protection of water supplies, benefit the health of the general public, and help assure the continued safe use of pesticides in production of agricultural commodit

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